

CLAIMS

1. An optical information recording/reproducing apparatus comprising a plurality of light sources, one of which emits an optical beam having such a wavelength as enables a larger amount of energy to be absorbed or reflected by recorded areas of a recording layer of an optical information medium than an amount of energy absorbed or reflected by non-recorded areas, said plurality of light sources emitting optical beams simultaneously to record information in an information recording mode.

Suba 2. An optical information recording/reproducing apparatus according to claim 1, wherein said plurality of light sources include a first light source and a second light source, at least one of which emits a light beam having a wavelength that enables a change rate of an absorption coefficient of unrecorded areas of the optical information medium to be within a range of  $\pm 5\%$  when the wavelength changes in a range of  $\pm 10\%$ .

3. An optical information recording/reproducing apparatus according to claim 1, wherein said plurality of light sources includes two light sources that are integrally provided for a single casing.

4. An optical information recording/reproducing apparatus according to claim 1, further comprising: a plane-parallel plate arranged at a predetermined

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angle and located at a position to which optical beams emitted from said plurality of light sources are directed.

5. An information recording/reproducing apparatus comprising:

a plurality of light sources; and  
an optical system for enabling optical beams from the light sources to be focused on a single point on a recording surface of an optical information medium,  
said optical system including an object lens having a focal distance of  $F_1$  and a collimator lens having a focal distance of  $F_2$ , ratio  $F_2/F_1$  being within a range of 4 to 10.

6. An information recording/reproducing apparatus according to claim 5, wherein said plurality of light sources are contained in one case.

7. An information recording/reproducing apparatus comprising:

a first light source for emitting an optical beam of a first wavelength;  
a second light source for emitting an optical beam of a second wavelength different from the first wavelength;

an optical system for guiding the optical beams from the first and second light sources along substantially one optical path, said optical system including a prism unit for synthesizing the optical

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beams from the first and second light sources together;

a detector for performing photoelectric conversion with respect to optical beams that are reflected by an optical information medium and guided to the detector by way of the object lens; and

a beam diameter varying device, arranged between the first and second light sources and the prism unit, for varying a beam spot diameter of an optical beam emitted from one of the first and second light sources.

8. An information recording/reproducing apparatus according to claim 7, wherein said beam diameter varying device is a cylindrical member which changes inner and outer diameters of a light beam incident thereon.

9. An information recording/reproducing apparatus according to claim 7, wherein said beam diameter varying device has a light-shielding structure for shielding a central portion of a light beam.

10. An information recording/reproducing apparatus according to claim 7, wherein said optical system further includes at least one of a collimator lens.

11. An information recording/reproducing apparatus according to claim 10, wherein said beam diameter varying device has a light-shielding structure for shielding a central portion of a light beam output from one of the collimator lens.